

CLAIMS

What is claimed is:

1. A system for identifying at least one object, the system comprising:
a signal transceiver system that detects a polarized light signal
5 from the at least one object; and
a signal processing system that identifies at least one characteristic
of the at least one object in response to the detected polarized light signal.

2. The system according to claim 1 further comprising a reflective
10 surface on at least a portion of the object.

3. The system according to claim 1 wherein the signal transceiver
system further comprises a photo emitter unit that transmits the polarized light
signal towards the object.

4. The system according to claim 3 wherein the signal transceiver
further comprises a drive unit that rotates the photo emitter unit, the signal
processing system controlling the drive unit and causing the photo emitter unit to
transmit the polarized light signal towards the object.

5. The system according to claim 1 further comprising a first optical
polarizer arranged in a first orientation on at least a portion of the signal
transceiver system with respect to a second optical polarizer arranged in a second
orientation on at least a portion of a reflective surface on the object.

6. The system according to claim 5 wherein the first optical polarizer
covers at least a portion of the photo emitter unit.

7. The system according to claim 5 wherein the first optical polarizer
30 covers at least a portion of a photo detector unit of the signal transceiver system.

8. The system according to claim 1 wherein the signal transceiver system further comprises a photo detector unit that detects the polarized light signal from the object.

5 9. The system according to claim 1 wherein the object comprises an ink cartridge.

10 10. The system according to claim 1 wherein the at least one characteristic comprises a low or high capacity, a particular brand, or a presence of an ink cartridge in a printing system.

11. A method for identifying at least one object, the method comprising:

15 detecting a polarized light signal from the object; and
identifying at least one characteristic of the at least one object in response to the detected signal.

12. The method according to claim 11 further comprising transmitting the polarized light signal towards the object.

20 13. The method according to claim 12 wherein the transmitting further comprises rotating a photo emitter unit, the transmitting being carried out by the photo emitter unit.

25 14. The method according to claim 11 further comprising reflecting the transmitted polarized light signal off of a reflective surface on the object when the transmitted polarized light signal has a polarization that is substantially the same as the polarization of an optical polarizer covering at least a portion of the reflective surface.

30 15. The method according to claim 11 wherein the detecting further comprises receiving the polarized light signal at a photo detector unit when the polarized light signal has a polarization that is substantially the same as the

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polarization of an optical polarizer covering at least a portion of the photo detector unit.

16. The method according to claim 11 wherein the identifying further comprises determining whether an ink cartridge has a low or high capacity, is a particular brand or is present in a printing system.

17. A computer readable medium having stored thereon instructions for identifying at least one object, which when executed by at least one processor, causes the processor to perform:

detecting a polarized light signal from the at least one object; and
identifying at least one characteristic of the at least one object in response to the detected polarized light signal.

18. The medium according to claim 17 further comprising transmitting the polarized light signal towards the object.

19. The medium according to claim 18 wherein the transmitting further comprises rotating a photo emitter unit, the transmitting being carried out by the photo emitter unit.

20. The medium according to claim 17 further comprising reflecting the transmitted polarized light signal off of a reflective surface on the object when the transmitted polarized light signal has a polarization that is substantially the same as the polarization of an optical polarizer covering at least a portion of the reflective surface.

21. The system according to claim 17 wherein the detecting further comprises receiving the polarized light signal at a photo detector unit when the polarized light signal has a polarization that is substantially the same as the polarization of an optical polarizer covering at least a portion of the photo detector unit.

22. The medium according to claim 17 wherein the identifying further comprises determining whether an ink cartridge has a low or high capacity, is a particular brand or is present in a printing system.

5 23. A system for communicating at least one characteristic of an object, the system comprising:
a polarizer system having an optical polarizer for processing a light signal; and
a signal system that sends the processed light signal.

10 24. The system according to claim 23 wherein the signal system further comprises a reflective surface covered by at least a portion of the optical polarizer.

15 25. The system according to claim 23 wherein the signal system further comprises a photo emitter covered by at least a portion of the optical polarizer.

20 26. The system according to claim 23 wherein the object comprises an ink cartridge.

27. A method for communicating at least one characteristic of an object, the method comprising:
processing a light signal using an optical polarizer; and
25 sending the processed light signal.

28. The method according to claim 27 wherein the processing further comprises receiving the light signal at the object, the received light signal penetrating the optical polarizer when the received light signal has a polarization
30 that is substantially the same as the optical polarizer.

29. The method according to claim 28 where the sending further comprises reflecting the penetrating signal back towards a source.

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30. The method according the claim 27 wherein the sending further comprises transmitting the processed light signal through the optical polarizer.

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